

Remarks

In view of the following discussion, the applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Thus, the applicants believe that all of these claims are in allowable form.

REJECTIONS

A. 35 U. S. C. § 102

1. Claims 1-2, 4, 6-7 and 9 are not anticipated by Yamauchi et al.

Claims 1-2, 4, 6-7 and 9 stand rejected under 35 U. S. C. § 102(a) as being anticipated by Yamauchi et al. (U. S. Patent Application Publication 2002/0176255 published November 28, 2002). The applicants submit that claims 1-2, 4, 6-7 and 9 are not anticipated by this reference.

Claim 1 is directed to a light engine of a projection display device (see, specification at page 1, lines 12-13). The light engine of the projection display device includes an illumination source 310, a light-dividing prism 320 and a plurality of integrators 330A, 330B, 330C (see, FIG 3 and the specification at page 3, lines 21-23). The light-dividing prism 320 receives light 301 from the illumination source 310 and provides such light 301 to each of the plurality of integrators 330A, 330B, 330C based on polarization control (see, FIG. 3 and the specification at page 3, line 23 to page 4, line 3). Each integrator 330A, 330B 330C thereafter directs the light toward a projection system where such light is separated into its component red, green and blue (RGB) bands of light (see, specification at page 4, lines 7-9).

Yamauchi et al. describes an illumination apparatus (see, Yamauchi et al. at FIGS. 15-17 and page 1, paragraph 0002). The illumination apparatus includes a light source 25, a polarization converter 31 and only one integrator 5 (see, Yamauchi et al. at FIGS. 15-17 and page 9, paragraphs 0140-0145).

Yamauchi et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light. Rather, Yamauchi et al. merely describes an illumination apparatus including a light source, a polarization converter and only one integrator. Since Yamauchi et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light, claim 1 is patentable over Yamauchi et al.

Independent claim 6 recites subject matter similar to that of claim 1 for a projection system. Claims 2, 4, 7 and 9 depend directly from claims 1 and 6, respectively. For the same reasons as stated above for claim 1, claims 2, 4, 7 and 9 are also patentable over Yamauchi et al.

B. 35 U. S. C. § 103

1. Claims 3 and 8 are not obvious over Yamauchi et al. in view of Peng et al.

Claims 3 and 8 stand rejected under 35 U. S. C. § 103(a) as being unpatentable over Yamauchi et al. (U. S. Patent Application Publication 2002/0176255 published November 28, 2002) in view of Peng et al. (U. S. Patent

6,843,591 issued January 18, 2005). The applicants submit that claims 3 and 8 are not rendered obvious by the combination of these references.

Claim 3 depends from claim 1 and is directed to a light engine of a projection display device (see, specification at page 1, lines 12-13). The light engine of the projection display device includes an illumination source 310, a light-dividing prism 320 and a plurality of integrators 330A, 330B, 330C (see, FIG 3 and the specification at page 3, lines 21-23). The light-dividing prism 320 receives light 301 from the illumination source 310 and provides such light 301 to each of the plurality of integrators 330A, 330B, 330C based on polarization control (see, FIG. 3 and the specification at page 3, line 23 to page 4, line 3). Each integrator 330A, 330B 330C thereafter directs the light toward a projection system where such light is separated into its component red, green and blue (RGB) bands of light (see, specification at page 4, lines 7-9).

Yamauchi et al. describes an illumination apparatus (see, Yamauchi et al. at FIGS. 15-17 and page 1, paragraph 0002). The illumination apparatus includes a light source 25, a polarization converter 31 and only one integrator 5 (see, Yamauchi et al. at FIGS. 15-17 and page 9, paragraphs 0140-0145).

Yamauchi et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light. Rather, Yamauchi et al. merely describes an illumination apparatus including a light source, a polarization converter and only one integrator. Since Yamauchi et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light, claim 3 is patentable over Yamauchi et al.

Peng et al. describes an optical coupler (see, Peng et al. at column 1, lines 6-9). The optical coupler 120 includes a plurality of light sources 104, 106, 108, 110, a reflective prism 130, collecting members 140, 142, 144, 146 and an integrating member 150 (see, Peng et al. at FIG. 1 and column 3, line 59 to column 4, line 7). The reflective prism 130 receives light from the light sources 104, 106, 108, 110 and provides the received light into the collecting members 140, 142, 144, 146 and subsequently to the integrating member 150 (see, Peng et al. at FIG. 1 and column 4, lines 8-18).

Peng et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light. Rather, Peng et al. only describes an optical coupler including a plurality of light sources, a reflective prism, collecting members and an integrating member, in which the reflective prism receives light from the light sources and provides the received light into the collecting members and subsequently to the integrating member. Since Peng et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light, claim 3 is patentable over Peng et al.

Furthermore, since Yamauchi et al. merely describes an illumination apparatus including a light source, a polarization converter and only one integrator and Peng et al. only describes an optical coupler including a plurality of light sources, a reflecting prism, collecting members and an integrating member, in which the reflective prism receives light from the light sources and provides the received light into the collecting members and subsequently to the integrating member, the combination of these references does not describe or

suggest applicants invention recited in claim 3. In particular, claim 3 recites a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light. Thus, claim 3 is patentable over the combination of these references.

Independent claim 6 recites subject matter similar to that of claim 1 for a projection system. Claim 8 depends directly from claim 6. For the same reasons as stated above for claim 1, claim 8 is also patentable over Yamauchi et al. in view of Peng et al.

2. Claims 3 and 8 are not obvious over Yamauchi et al. in view of Suzuki et al.

Claims 3 and 8 stand rejected under 35 U. S. C. § 103(a) as being unpatentable over Yamauchi et al. (U. S. Patent Application Publication 2002/0176255 published November 28, 2002) in view of Suzuki et al. (U. S. Patent Application Publication 2002/0080485 published June 27, 2002). The applicants submit that claims 3 and 8 are not rendered obvious by the combination of these references.

Claim 3 depends from claim 1 and is directed to a light engine of a projection display device (see, specification at page 1, lines 12-13). The light engine of the projection display device includes an illumination source 310, a light-dividing prism 320 and a plurality of integrators 330A, 330B, 330C (see, FIG 3 and the specification at page 3, lines 21-23). The light-dividing prism 320 receives light 301 from the illumination source 310 and provides such light 301 to each of the plurality of integrators 330A, 330B, 330C based on polarization control (see, FIG. 3 and the specification at page 3, line 23 to page 4, line 3). Each integrator 330A, 330B 330C thereafter directs the light toward a projection

system where such light is separated into its component red, green and blue (RGB) bands of light (see, specification at page 4, lines 7-9).

Yamauchi et al. describes an illumination apparatus (see, Yamauchi et al. at FIGS. 15-17 and page 1, paragraph 0002). The illumination apparatus includes a light source 25, a polarization converter 31 and only one integrator 5 (see, Yamauchi et al. at FIGS. 15-17 and page 9, paragraphs 0140-0145).

Yamauchi et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light. Rather, Yamauchi et al. merely describes an illumination apparatus including a light source, a polarization converter and only one integrator. Since Yamauchi et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light, claim 3 is patentable over Yamauchi et al.

Suzuki et al. describes a polarized light illuminator (see, Suzuki et al. at page 1, paragraph 0002). The polarized light illuminator includes a lamp 1, a polarizing device 5, and an integrator lens 4 (see, Suzuki et al. at FIG. 1 and page 3, paragraphs 0048-0049).

Suzuki et al. does not describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light. Rather, Suzuki et al. only describes polarized light illuminator including a lamp, a polarizing device, and an integrator lens. Since Suzuki et al. does not

describe or suggest a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light, claim 3 is patentable over Suzuki et al.

Furthermore, since Yamauchi et al. merely describes an illumination apparatus including a light source, a polarization converter and only one integrator and Suzuki et al. only describes polarized light illuminator including a lamp, a polarizing device, and an integrator lens, the combination of these references does not describe or suggest applicants invention recited in claim 3. In particular, claim 3 recites a light engine of a projection display device in which a light-dividing prism receives light from an illumination source and provides the light to each of a plurality of integrators based on polarization control that thereafter direct such light toward a projection system where the light is separated into its component red, green and blue (RGB) bands of light. Thus, claim 3 is patentable over the combination of these references.

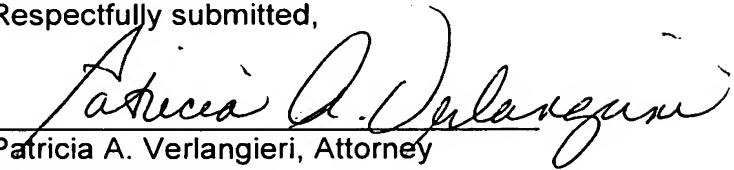
Independent claim 6 recites subject matter similar to that of claim 1 for a projection system. Claim 8 depends directly from claim 6. For the same reasons as stated above for claim 1, claim 8 is also patentable over Yamauchi et al. in view of Suzuki et al.

CONCLUSION

Thus, the applicants submit that none of the claims, presently in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Consequently, the applicants believe that all of the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609) 734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,


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